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9 Proven Steps To Enhance Your DevOps Strategy

DevOps Underpins
The Modern Infrastructure

DevOps Technology Has Become One Of The Most Important Elements Of Next-Generation It And Modern Infrasctructure.

Today's digital businesses rely on the speed and agility that DevOps provides, and would be at a competitive disadvantage without its effective use.

The recent survey performed by Puppet and DevOps Research and Assessment (DORA) shows some very compelling data to support this position. High-performing IT organizations are deploying 200 times more frequently than low performers. They have a 3x lower change failure rate. However, the most staggering number may be that high performers are able to deploy changes to successfully running production code 2,555x faster. It's an almost unimaginable competitive advantage.

The modern digital business is demanding that IT transform its operations and processes to ensure that the organization can become a "digital predator," not "digital prey."

There are three key aspects of this transformation: speed, agility, and responsiveness. The DORA data is proof positive that effectively deploying DevOps is essential to meeting those three requirements.

Benefits of DevOps

Ensuring the Benefits of DevOps
Meet the Promise

While the benefits from the DevOps approach are obvious and compelling, implementing a DevOps strategy that actually delivers on those benefits is not quite as easy as it appears. There are often a number of very real impediments to success. Understanding these "speed bumps" on the road to DevOps effectiveness is critical to getting over them. One of the most common issues is that internal IT staff may have limited skills or lack expertise in specific aspects of DevOps. As is common with many new technology initiatives, there is a demonstrable lag between the time a new approach becomes mainstream and when internal IT staff develop an effective and comprehensive skill set to support it. Making matters more difficult, internal IT organizations have been under constant pressure to reduce or optimize staff, limiting any extra "cycles" to develop expertise outside of the skills needed for legacy operations. In addition, the organizational structure of many IT groups tends to create silos or barriers to the effective development of cross-organizational skills.

It is also critical to note that DevOps is a holistic, integrated approach that requires a cohesive operating process, which makes skills or expertise gaps very problematic. DevOps cannot work if segments of the process aren't being completed. Making matters more difficult, many of the vendors that offer DevOps solutions only focus on specific parts of the process. Because many IT professionals are not well versed in the nuances of DevOps, they may purchase incomplete solutions. Therefore, it is important for IT to fully understand what they are purchasing.

Finally, since DevOps is a relatively new concept, the majority of organizations leveraging DevOps to date have not yet been able to fully utilize all aspects. Even limited DevOps deployments have shown substantial value, such as the use of containers and configuration management. However, such tactical steps and interim successes may cause an IT organization to miss the need for a longer-term strategic vision and cohesive goal for DevOps.

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Why It's Important To Choose The Right DevOps Partner

Since many organizations lack the in-house resources and skills to complete a substantial DevOps deployment in a timely fashion without impacting ongoing IT operations, the majority of DevOps projects today are being completed with the assistance of services providers. Services organizations can ensure the timely completion of DevOps initiatives by providing additional resources.

Therefore, choosing the right partner is critical. The starting point is to ensure your provider has a thorough understanding of the entire DevOps process. This knowledge is essential to accurately identifying what additional services are necessary to augment existing IT skills. Some DevOps consultants have a narrow range of skills and try to force-fit all projects into their limited expertise.

A comprehensive perspective will also aid in determining the specific skills needed to complete the project. An important best practice for service providers is to ensure that the customer only has to contract for services or skills they truly need so that the project has the greatest efficiency. Leveraging existing internal skills and combining them with the necessary external skills offers the best ROI.

Once the scope of the project and necessary skills/activities are nailed down, it is important to ensure that the services organization has proven processes and frameworks for doing the work. Unfortunately, DevOps is attracting services organizations that want to jump on the DevOps bandwagon but have limited expertise. This isn't all bad, but you don't want your IT budget subsidizing their on-the-job training and learning. Reviewing the detailed project timeline and process documents is an important part of the evaluation process.

Another critical aspect of this process knowledge is the ability to manage the changeover from legacy systems to DevOps. The reality is that the vast majority of organizations are not going to be implementing a "green field" DevOps solution. It will nearly always have to be integrated at some level with the existing legacy processes and approaches. Therefore, your services provider of choice should be able to support the transition from where you are today to where you want to be tomorrow.

Sphere Partners is a skill provider of DevOps services and has made investments in technical and organizational skills to deliver high quality solutions for client engagements. One of the clearest manifestations of this intellectual property is the Sphere 9-step approach to DevOps.

1 Plan

Designing a DevOps pipeline means everything is automated from start to finish, and saved in a source code management tool. The first thing you want to do is set up your development workstation. This is usually done on a Mac or Linux workstation.

2 Code

The application should be designed with the cloud in mind using behavior-driven development (BDD), test-driven development (TDD), and agile methods. If you're new to Azure or Amazon Web Services (AWS), it's a good idea to read the AWS best-practices guide. Depending on how code commits are done, it will be done in small batches or using feature branches. It might be different depending on your sprints and if you're doing continuous delivery or continuous deployments

3 Build

Using continuous integration (CI) tools such as Jenkins, Bamboo, Team City, Circle CI, Travis, or Gitlab CI, you can fully automate the build process. The general idea is to create a job in your CI tool of choice and automate the build, testing, packaging, and deploying of the code.

4 Test

One of the basic principles of CI is that a build should be verifiable. You must be able to objectively determine whether a particular build is ready to proceed to the next stage of the build process, and the most convenient way to do this is to use automated tests.

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5 Release

Release is what software development is all about—creating a version of software to deploy. Using your CI tool you can automate the build process to create a binary artifact or package up the code for easy deployment. The binary artifact can be in many different forms to meet the needs specific to your stack.

6 Deploy

The main part of the DevOps pipeline is continuous deployment. It's taking that release after the automated build and test, and downloading it from the binary repository and pushing or pulling the release onto a server to run the application. This is where DevOps is heavily dependent on the developer's workflow and best practices.

7 Orchestrate

Orchestration is about coordination: You define how and when you want to execute the automated jobs on your CI server. Orchestration solutions allow you to define if and when they are executed on a scheduled, triggered, or on-demand basis. You want to orchestrate your jobs to be running in parallel, not all chained together.

8 Monitor

In the DevOps pipeline, monitoring Infrastructure and application performance metrics gives you constant feedback of your environment. When you get an alert from one of these tools the best thing you can do is do a search in your ELK stack or Graylog Cluster to dive deeper into the problem. This means you need to make sure that all of your infrastructure has the correct time and time zone setup so you can correlate events from different systems.

9 Develop

Most projects will utilize one of the two most prominent central logging solutions: Elastic Stack (Elasticsearch, Kibana, Logstash) and Graylog. They collect logs from all services, applications, networks, tools, servers, and other devices into a single, centralized location for processing and analysis. They both come with the ability to create dashboards for visualization of specific metrics.

How Sphere DevOps Consulting Helped Fuse To Succed

Fuse is an award-winning, global learning solutions company that is revolutionizing learning, knowledge sharing, and communication in the workplace. Fuse launched a personalized learning platform that empowers companies and individuals to curate custom content, develop new skills, and track performance around learning plans.

However, Fuse had a very limited IT infrastructure that could not keep up with organizational demand for agility and performance. As a result, Fuse made the decision to work with Sphere's DevOps consultants. Working with Fuse to understand all of the critical issues, Sphere came to the conclusion that the best path was to migrate to a DevOps approach using AWS.

During this migration, the Sphere consulting team created multiple development instances in addition to a UAT environment to allow testing in a simulated production setting without impacting production system uptime.

The Sphere team utilized both Chef and OpsWorks to build out the necessary layers, including front end,back end, storage, and database. Chef scripts were customized to separate the different applications during deployment.

The project team worked with the Fuse CTO and head of product development on the larger issues, but to ensure that specific demands were met, there were Sphere teams focused on certain initiatives that each had their own Fuse product owner. The Sphere teams concentrated on the more technical activities of architecture design, code development, acceptance testing, and technical maintenance. Using this approach, Sphere was able to deploy both a long-term platform to support Fuse's larger goals, while delivering the specific functionality needed in unique applications.

This successful project allows Fuse to continue to innovate and create new offerings. Using the Sphere/AWS solution new products from Fuse can scale seamlessly, and innovative new features are regularly released to customers.

Sphere's Three Principles for Effective DevOps Client Engagements

Sphere has not only developed proven processes and frameworks for successful DevOps projects, but also has deployed a business model with three key tenets that are focused on successful customer engagements. These three overriding principles make Sphere a provider that IT organizations can depend on. The three principles include:

1 A focus on a long-term partnership to drive success. Many services organizations want to complete a project and then be done. The "short term" approach can also result in hidden problems that only emerge well after the project is over. This is clearly not in the customer's best interests. Sphere believes that a longer-term relationship is best positioned to provide ongoing support and maintenance to 01 deliver long-term value.

2 Provide the highly skilled and high-level staff needed for a successful project. When a specific task or problem requires the most experienced and capable human resource, Sphere makes sure that they are available and well versed in the project to ensure results. Sphere also optimizes the use of these higher-cost resources to ensure costs don't escalate.

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Summary

There is no disagreement that DevOps processes will come to define application development and deployment for many years to come, providing the speed, agility, and new solutions that digital businesses require. However, few organizations have the complete set of necessary skills to effectively migrate from legacy approaches to DevOps. As a result, there will be considerable demand for services providers who can help internal IT make the change. The key is to choose the right services partner, one that has proven and documented processes and frameworks that ensure project success. The best-in-class partners will also take the time and effort to truly learn about your organization and its unique needs to deliver the optimal solution.

1. https://puppet.com/resources/white-paper/2016-state-of-devops-report

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About Sphere Partners

Sphere Partners is a strategic technology partner offering consulting services, cutting-edge software development, expert engineering teams on-demand and enterprise platform implementations such as Monday.com, Netsuite, Salesforce, Google Cloud and Snowflake for companies seeking to transform in a demanding digital world.

With a global team of business and technology consultants, solution creators, and engineers, Sphere delivers strategy, design, and software development to help organizations solve their technology challenges and improve productivity, enhance the user experience, and maximize growth.